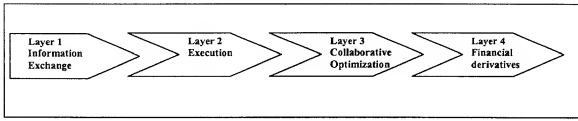


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FIG. 1 Implementation and Use of Layers

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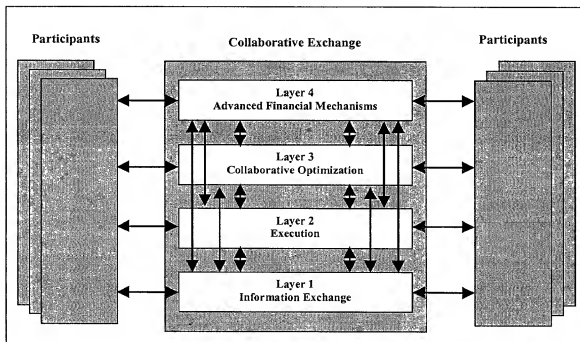
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FIG. 2 Architecture and Interactions of the Collaborative Exchange



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Figure 3

Simple request:
Attributes:
Buyer: Fred's ValueMart
Specifications:
SKU: 72650
Manuf: Shawn's Shampoos
Qty: 3 pallets
Contract#: 875109
Delivery: 7pm 01/15/00
- 5am 01/17/00

Simple response:
Attributes:
Seller: Shawn's Shampoos
Specifications:
SKU: 72650
Manuf: Shawn's Shampoos
Qty: 3 pallets
Contract#: 875109
Delivery: 11pm 01/16/00
- 3am 01/17/00

FIG. 4 A Flexible Request and Response

Flexible request:

Attributes: Buyer: Fred's ValueMart

Alternatives:

Label:	R1A	R1B	R1C
SKU:	72650	72650	72650
Manuf:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Seller:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Qty:	3 pallets	4 pallets	4 pallets
Contract#:	875109	875109	875109
Delivery:	3pm 01/15/00 - 8pm 01/15/00	3pm 01/16/00 - 8pm 01/16/00	3pm 01/17/00 - 8pm 01/17/00

Utilities: R1=6, R2=5 R3=4 (visible)

Conditions: none

Flexible response:

Attributes: Seller: Shawn's Shampoos

Alternatives:

Label:	Q1A	Q1B	Q1C
SKU:	72650	72650	72650
Manuf:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Seller:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Qty:	3 pallets	4 pallets	4 pallets
Contract#:	875109	875109	875109
Delivery:	5pm 01/15/00 - 9pm 01/15/00	4pm 01/16/00 - 8pm 01/16/00	3pm 01/17/00 - 7pm 01/17/00

Utilities: none

Conditions: none

Figure 5 Linked Flexible Requests and Responses: Part 1

Flexible request R1 from Fred's ValueMart for replenishment:

Attributes:

Buyer: Fred's ValueMart

Alternatives:

Label:	R1A	R1B	R1C
SKU:	72650	72650	72650
Manuf:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Seller:	Shawn's Shampoos	Shawn's Shampoos 4	Shawn's Shampoos 4
Qty:	3 pallets	pallets	pallets
Contract#:	875109	875109	875109
Delivery:	3pm 01/15/00 - 8pm 01/15/00	3pm 01/16/00 - 8pm 01/16/00	3pm 01/17/00 - 8pm 01/17/00

Utilities: R1=6, R2=5 R3=4 (visible)

Conditions: none

Flexible response Q1 from Shawn's Shampoos for product:

Attributes:

Seller: Shawn's Shampoos

Alternatives:

Label:	Q1A	Q1B	Q1C
SKU:	72650	72650	72650
Manuf:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Seller:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Qty:	3 pallets	4 pallets	4 pallets
Contract#:	875109	875109	875109
Delivery:	3pm 01/15/00 - 7pm 01/15/00	4pm 01/16/00 - 8pm 01/16/00	3pm 01/17/00 - 7pm 01/17/00

Utilities: none

Conditions: Q1A ⇔ R2A; Q1B ⇔ R2B; Q1C ⇔ R2C

Figure 6 Linked Flexible Requests and Responses: Part 2

Flexible request R2 from Shawn's Shampoos for transport service:

Attributes:

Buyer: Shawn's Shampoos

Alternatives:

Label:	R2A	R2B	R2C
Source:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Dest:	Albertson's 87501	Albertson's 87501	Albertson's 87501
Seller:	Tim's Trucking	Tim's Trucking	Tim's Trucking
Qty:	3 pallets	4 pallets	4 pallets
Contract#:	BF9716	BF9716	BF9716
Pickup:	3am 01/15/00 - 5am 01/15/00	4am 01/16/00 - 6am 01/16/00	3am 01/17/00 - 5am 01/17/00
Delivery:	3pm 01/15/00 - 8pm 01/15/00	3pm 01/16/00 - 8pm 01/16/00	3pm 01/17/00 - 8pm 01/17/00

Utilities: none

Conditions: R2A ⇔ R1A; R2B ⇔ R1B; R2C ⇔ R1C

Flexible response Q2 from Tim's Trucking for transport service:

Attributes:

Seller: Tim's Trucking

Alternatives:

Label:	Q2A	Q2B	Q2C
Source:	Shawn's Shampoos	Shawn's Shampoos	Shawn's Shampoos
Dest:	Albertson's 87501	Albertson's 87501	Albertson's 87501
Seller:	Tim's Trucking	Tim's Trucking	Tim's Trucking
Qty:	3 pallets	4 pallets	4 pallets
Contract#:	BF9716	BF9716	BF9716
Pickup:	4am 01/15/00 - 5am 01/15/00	4am 01/16/00 - 5am 01/16/00	4am 01/17/00 - 5am 01/17/00
Delivery:	7pm 01/15/00 - 8pm 01/15/00	3pm 01/16/00 - 4pm 01/16/00	5pm 01/17/00 - 7pm 01/17/00

Utilities: Q2A=3, Q2B=1 Q2C=1

Conditions: none

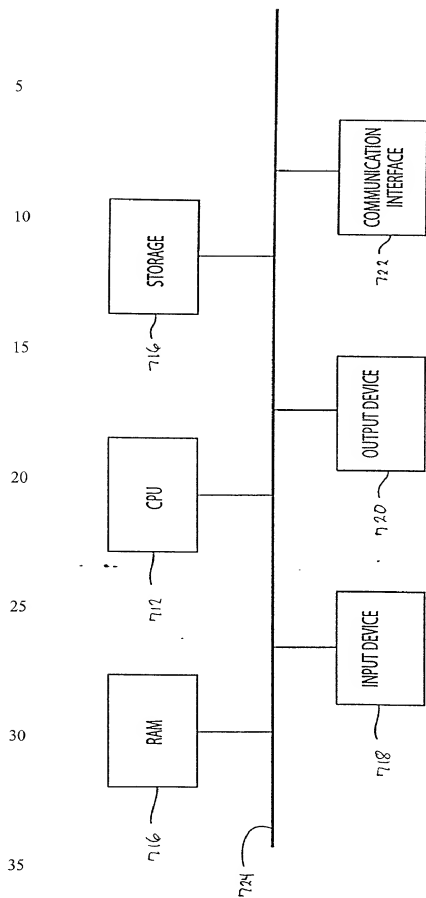


Fig. 7